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**IVERSITY**

*SOUTH DAKOTA*  
*AGRICULTURAL COLLEGE*

AND

Experiment Station,

BROOKINGS, S. D.

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DEPARTMENT OF BOTANY AND ENTOMOLOGY.

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Native Trees and Shrubs.

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# Native Trees and Shrubs of South Dakota.

THOMAS A. WILLIAMS, Botanist and Entomologist.

In the course of our study of the flora of South Dakota during the past two years, a large amount of material relating to the woody plants has been gathered together. A portion of this is included in this bulletin. This report is published with a two-fold object in view. It is hoped that it will stimulate a closer study of our trees and shrubs and their distribution throughout the state, and also serve to some extent as a guide in the selection of plants for planting. A knowledge of the trees and shrubs growing naturally in a given region will enable one to make a better selection of kinds suitable to the existing conditions.

Additions or corrections to this list will be thankfully received, and specimens of woody plants from all parts of the state are solicited.

## DISTRIBUTION IN THE STATE.

Until more is known of the geographical distribution of the various members of the South Dakota flora, the state may be divided, arbitrarily of course, into five or six regions. The former number will suit our present purpose. In the northeastern part of the state the land is drained by streams flowing into Big Stone lake and the Minnesota river. The flora is quite distinct from that of the remain-

der of the state, and belongs to that of the great Minnesota river basin. This portion of the state may be called the Bigstone Region. Joining this on the south and west is the Sioux Valley Region. This in turn is joined on the west by the James Valley Region. Through the middle of the state extending from the north to the south border, lies the Missouri Valley Region. In the southwest part of the state the Black Hills Region furnishes us with a large number of Rocky Mountain forms.



MAP OF SOUTH DAKOTA SHOWING THE LARGER LAKES AND STREAMS.

In all, *one hundred and seventeen* species of woody plants are considered in this report. Of these 37 would be classed as trees, 74 as shrubs and 6 as woody climbers. The large percentage of shrubs is noticeable.

Up to the present writing 46 species have been found in the Bigstone Region, 50 in the Sioux Valley Region, 37 in the James Valley Region, 72 in the Missouri Valley Region, and 82 in the Black Hills Region, while 25 have been found throughout the state.

# LISTS OF TREES AND SHRUBS FOUND IN THE VARIOUS REGIONS.

## IN ALL REGIONS.

- |                            |                        |
|----------------------------|------------------------|
| 12. Cottonwood,            | 71. Choke Cherry,      |
| 15. Heart-leaved Willow,   | 74. Shoe-string,       |
| 16. Diamond Willow,        | 75. False Indigo,      |
| 21. Sandbar Willow,        | 79. Poison Ivy,        |
| 31. Mossy-cup Oak,         | 82. Bittersweet,       |
| 32. White Elm,             | 84. Box Elder,         |
| 35. Hackberry,             | 89. Early Wild Grape,  |
| 42. Wild Black Currant,    | 90. Virginia Creeper,  |
| 52. Suscutan or Juneberry, | 98. Red-Osier Dogwood, |
| 54. Hawthorn,              | 102. Green Ash,        |
| 58. Red Raspberry,         | 103. Red Ash,          |
| 62. Prairie Rose,          | 108. Wolf-berry.       |
| 67. Wild Plum,             |                        |

## BIGSTONE REGION.

- |                          |                       |
|--------------------------|-----------------------|
| 5. Red Cedar,            | 61. Say's Rose,       |
| 12. Cottonwood,          | 62. Prairie Rose,     |
| 13. Quaking Asp,         | 65. Smooth Rose,      |
| 15. Heart-leaved Willow, | 67. Wild Plum,        |
| 16. Diamond Willow,      | 71. Choke Cherry,     |
| 19. Hairy Willow,        | 74. Shoe-string,      |
| 21. Sandbar Willow,      | 75. False Indigo,     |
| 22. Black Willow,        | 77. Prickly Ash,      |
| 24. Ironwood,            | 78. Smooth Sumach,    |
| 25. Hazel-nut,           | 79. Poison Ivy,       |
| 31. Mossy-cup Oak,       | 81. Waahoo,           |
| 32. White Elm,           | 82. Bittersweet,      |
| 35. Hackberry,           | 84. Box Elder,        |
| 39. Moonseed,            | 89. Early Wild Grape, |
| 42. Wild Black Currant,  | 90. Virginia Creeper, |



- |                                 |                         |
|---------------------------------|-------------------------|
| 43. Missouri Gooseberry,        | 91. Basswood,           |
| 44. Smooth Gooseberry,          | 96. Bailey's Cornel,    |
| 50. Willow-leaved Meadow-sweet, | 98. Red-Osier Dogwood,  |
| 52. Suscutan,                   | 102. Green Ash,         |
| 54. Hawthorn,                   | 103. Red Ash,           |
| 55. Hairy Hawthorn,             | 106. Sheep-berry,       |
| 56. Black Raspberry,            | 108. Wolf-berry,        |
| 58. Red Raspberry,              | 111. Hairy Honeysuckle. |

## SIOUX VALLEY REGION.

- |                                 |                        |
|---------------------------------|------------------------|
| 5. Red Cedar,                   | 62. Prairie Rose,      |
| 11. Balsam Poplar,              | 65. Smooth Rose,       |
| 12. Cottonwood,                 | 67. Wild Plum,         |
| 13. Quaking Asp,                | 71. Choke Cherry,      |
| 15. Heart-leaved Willow,        | 74. Shoe-string,       |
| 16. Diamond Willow,             | 75. False Indigo,      |
| 21. Sandbar Willow,             | 77. Prickly Ash,       |
| 22. Black Willow,               | 78. Smooth Sumach,     |
| 25. Hazel-Nut,                  | 79. Poison Ivy,        |
| 31. Mossy-cup Oak,              | 81. Waahoo,            |
| 32. White Elm,                  | 82. Bittersweet,       |
| 33. Red Elm,                    | 84. Box Elder,         |
| 34. Rock Elm,                   | 85. Silver Maple,      |
| 35. Hackberry,                  | 87. Red Root,          |
| 39. Moonseed,                   | 89. Early Wild Grape,  |
| 42. Wild Black Currant,         | 90. Virginia Creeper,  |
| 43. Missouri Gooseberry,        | 91. Basswood,          |
| 44. Smooth Gooseberry,          | 98. Red-Osier Dogwood, |
| 50. Willow-leaved Meadow-sweet, | 101. White Ash,        |
| 52. Suscutan,                   | 102. Green Ash,        |
| 53. Service-berry,              | 103. Red Ash,          |
| 54. Hawthorn,                   | 106. Sheep-berry,      |
| 55. Hairy Hawthorn,             | 108. Wolf-berry,       |
|                                 | 110. Indian Currant,   |

- |                      |                         |
|----------------------|-------------------------|
| 56. Black Raspberry, | 111. Hairy Honeysuckle. |
| 58. Red Raspberry,   |                         |

## JAMES VALLEY REGION.

- |                            |                         |
|----------------------------|-------------------------|
| 12. Cottonwood,            | 71. Choke Cherry,       |
| 14. Almond Willow,         | 74. Shoe-string,        |
| 15. Heart-leaved Willow,   | 75. False Indigo,       |
| 16. Diamond Willow,        | 76. Dwarf False Indigo, |
| 21. Sandbar Willow,        | 78. Smooth Sumach,      |
| 31. Mossy-cup Oak,         | 79. Poison Ivy,         |
| 32. White Elm,             | 81. Waahoo,             |
| 35. Hackberry,             | 82. Bittersweet,        |
| 39. Moonseed,              | 84. Box Elder,          |
| 40. Golden Currant,        | 89. Early Wild Grape.   |
| 42. Wild Black Currant,    | 90. Virginia Creeper,   |
| 43. Missouri Gooseberry,   | 93. Buffalo-berry.      |
| 52. Suscutan or Juneberry, | 96. Bailey's Cornel,    |
| 54. Hawthorn,              | 98. Red-Oiser Dogwood,  |
| 62. Prairie Rose,          | 102. Green Ash.         |
| 65. Smooth Rose,           | 108. Wolf-Berry,        |
| 67. Wild Plum,             | 110. Indian Currant,    |
| 68. Wild Cherry,           | 112. Green Greasewood.  |
| 70. Sand Cherry,           |                         |

## MISSOURI VALLEY REGION.

- |                           |                           |
|---------------------------|---------------------------|
| 4. Creeping Juniper,      | 71. Choke Cherry.         |
| 5. Red Cedar,             | 72. Honey Locust,         |
| 8. Black Walnut.          | 73. Kentucky Coffee-tree. |
| 12. Cottonwood.           | 74. Shoe-string,          |
| 14. Almond-leaved Willow. | 75. False Indigo,         |
| 15. Heart-leaved Willow.  | 76. Dwarf False Indigo.   |
| 16. Diamond Willow.       | 77. Prickly Ash.          |
| 21. Sandbar Willow.       | 78. Smooth Sumach.        |
| 22. Black Willow.         | 79. Poison Ivy.           |
| 24. Ironwood.             | 80. Low Sumach.           |

- |                            |                           |
|----------------------------|---------------------------|
| 25. Hazel-nut.             | 81. Waahoo.               |
| 31. Mossy-cup Oak.         | 82. Bittersweet.          |
| 32. White Elm.             | 84. Box Elder.            |
| 33. Red Elm.               | 85. Silver Maple.         |
| 34. Rock Elm.              | 87. Red root.             |
| 35. Hackberry.             | 89. Early Wild Grape.     |
| 36. Mulberry.              | 90. Virginia Creeper.     |
| 37. Greasewood.            | 91. Basswood.             |
| 39. Moonseed.              | 92. Silver-berry.         |
| 40. Golden Currant.        | 93. Buffalo-berry.        |
| 41. Squaw Currant.         | 95. Rough-leaved Dogwood. |
| 42. Wild Black Currant.    | 96. Bailey's Cornel.      |
| 43. Missouri Gooseberry.   | 97. Kinnikinnik.          |
| 52. Suscutan or Juneberry. | 98. Red-Osier Dogwood.    |
| 54. Hawthorn.              | 101. White Ash.           |
| 55. Hairy Hawthorn.        | 102. Green Ash.           |
| 56. Black Raspberry.       | 103. Red Ash.             |
| 58. Red Raspberry.         | 104. Elder.               |
| 62. Prairie Rose.          | 106. Sheep-berry.         |
| 63. Engelmann's Rose.      | 108. Wolf-berry.          |
| 64. Fendler's Rose.        | 110. Indian Currant.      |
| 65. Smooth Rose,           | 112. Green Greasewood.    |
| 66. Low Rose,              | 113. Rayless Golden-rod.  |
| 67. Wild Plum,             | 114. Rayless Golden-rod.  |
| 68. Wild Cherry,           | 115. Little Sage-brush.   |
| 69. Sand Cherry,           | 116. Worm-wood.           |

## BLACK HILLS REGION.

- |                          |                        |
|--------------------------|------------------------|
| 1. Yellow Pine,          | 60. Mountain Mahogany, |
| 2. White Spruce,         | 62. Prairie Rose,      |
| 3. Common Juniper,       | 63. Engelmann's Rose,  |
| 5. Red Cedar,            | 64. Fendler's Rose,    |
| 9. Rydberg's Cottonwood, | 66. Low Rose,          |
| 10. Black Cottonwood,    | 67. Wild Plum,         |
| 11. Balsam Poplar,       | 68. Wild Cherry,       |

- |                            |                            |
|----------------------------|----------------------------|
| 12. Cottonwood,            | 69. Wild Red Cherry,       |
| 13. Quaking Asp,           | 70. Sand Cherry,           |
| 15. Heart-leaved Willow,   | 71. Choke Cherry,          |
| 17. Glaucous Willow,       | 74. Shoe-string,           |
| 18. Yellow Willow,         | 75. False Indigo,          |
| 19. Hairy Willow,          | 76. Dwarf False Indigo,    |
| 20. Prairie Willow,        | 79. Poison Ivy,            |
| 21. Sandbar Willow,        | 80. Low Sumach,            |
| 23. Beaked Willow,         | 82. Bittersweet.           |
| 25. Hazel-nut,             | 83. Mountain Maple,        |
| 26. Beaked Hazel-nut,      | 84. Box Elder,             |
| 27. Dwarf Birch,           | 86. Fendler's Ceanothus,   |
| 28. Black Birch,           | 87. Red Root,              |
| 29. Canoe Birch,           | 88. Velvety Ceanothus,     |
| 30. White Oak,             | 89. Early Wild Grape,      |
| 31. Mossy-cup Oak,         | 90. Virginia Creeper,      |
| 32. White Elm,             | 92. Silver-berry,          |
| 35. Hackberry,             | 93. Buffalo-berry,         |
| 37. Greasewood,            | 94. Low Shepherdia,        |
| 38. Creeping Barberry,     | 96. Bailey's Cornel,       |
| 40. Golden Currant,        | 98. Red-Osier Dogwood,     |
| 41. Squaw Currant,         | 99. Bear-berry,            |
| 42. Wild Black Currant,    | 100. Small-leaved Whortle- |
| 43. Swamp Gooseberry,      | berry,                     |
| 46. Spiny Gooseberry,      | 102. Green Ash,            |
| 47. Western Nine-bark,     | 103. Red Ash,              |
| 48. Nine-bark,             | 104. Elder,                |
| 49. Birch-leaved Meadow-   | 105. Red-berried Elder,    |
| sweet,                     | 106. Sheep-berry,          |
| 51. Mountain Ash,          | 107. Cranberry Tree,       |
| 52. Suscutan or Juneberry, | 108. Wolf-berry,           |
| 54. Hawthorn,              | 109. Snow-berry,           |
| 57. Salmon-berry,          | 111. Hairy Honeysuckle,    |
| 58. Red Raspberry,         | 112. Green Greasewood,     |
| 59. Shrubby Cinque-foil,   | 114. Rayless Golden-rod.   |

## PINE FAMILY.

1. YELLOW PINE (*Pinus ponderosa scopulorum*, Engelm.) This is the only pine found in the state. It reaches a fair size and is a valuable timber tree. The leaves grow in clusters of two or three and are from three to five inches in length. The cones require two seasons to reach maturity, ripening in autumn. This pine is very hardy. In many places in the west, fine trees may be found growing in the poorest soil under the most adverse conditions of drought and exposure. It is a promising tree for forest plantations. It occurs throughout the Black Hills.

2. WHITE SPRUCE (*Picea canadensis*, (Mill.) B. S. P.) A handsome tree of large size growing on the higher hills in the Black Hills region. A valuable tree for forest planting. The occurrence of this tree in this region affords an interesting problem in the geographical distribution of plants. This is the *Picea alba* of Gray's Manual.

3. COMMON JUNIPER (*Juniperus communis*, L.) A low spreading evergreen with the rigid, sharp-pointed leaves in whorls of three and about half an inch in length, and with dark blue berries about one-fourth of an inch in diameter. Found in the Black Hills region at Custer, and probably also occurring elsewhere in the Hills.

4. CREEPING JUNIPER (*Juniperus sabina procumbens*, Pursh.) A prostrate or creeping evergreen shrub with two sorts of leaves, one awl-shaped and loose, the other scale-like and oppressed; berries about one-third of an inch in diameter, on short recurved stalks.

This was found in ravines at Pineau Hills, where it formed a thick mat over the surface of the ground. It was also sent from Westport. It is an excellent thing for use along embankments and other places likely to wash.



The long, creeping stems are also valuable as Christmas decorations.

5. RED CEDAR (*Juniperus virginiana*, L.) This cedar occurs as a small or medium-sized tree in the Sioux valley, along the Missouri and its tributaries, and throughout the Black Hills. As in the creeping juniper the leaves are usually opposite and of two sorts. The scale-like leaves are usually obtusely pointed and the berries are on straight stalks and are only about one-fourth of an inch in diameter.

A pale or glaucous-leaved variety is common along the Cheyenne river. It is a much prettier tree than the common form and would undoubtedly be valuable for an ornamental tree.

#### GREEN-BRIAR FAMILY.

6. COMMON GREEN-BRIAR (*Smilax rotundifolia*, L.) A climbing plant with the stem armed with scattered prickles and with large rounded leaves; the bluish-black berries covered with a distinct bloom. Specimens of this plant were collected at Running Water and though it has not yet been found elsewhere it probably occurs throughout the southeastern part of the state. This climber grows naturally in the denser, moister thickets and like the following species, may be used as an ornamental with good effect.

7. GREEN-BRIAR (*Smilax hispida*, Muhl.) Somewhat like the preceding but with the leaves less rounded and the stem (at least below) densely covered with slender, blackish prickles. More or less plentiful throughout the more wooded localities in the eastern half of the state.

## WALNUT FAMILY.

8. BLACK WALNUT (*Juglans nigra*, L.) A large tree with a thick rough bark, valuable for its wood and nuts. It is easily grown from the nuts and seems to do well in the eastern part of the state when once fairly started. It is found growing naturally in Union county and probably also elsewhere in the southeastern part of the state.

## WILLOW FAMILY.

9. RYDBERG'S COTTONWOOD (*Populus acuminata*, Rydberg.) This is one of the so called black cottonwoods and is intermediate between the narrow-leaved black cottonwood and the balsam poplar. Mr. Rydberg, who discovered and named it, speaks of it as being a dark green tree with a pyramidal crown and spreading branches. It was first found in Scott's Bluff county, western Nebraska, in 1891, and was again found in 1893 in the Black Hills at Hot Springs.

10. NARROW-LEAVED BLACK COTTONWOOD, (*Populus angustifolia*, James.) This is a fine large tree, easily distinguished from other cottonwoods by its narrow willow-like leaves, which have a tendency to blacken in drying. It occurs in the Black Hills along streams.

11. BALSAM POPLAR (*Populus balsamifera*, L.) A large tree with the heart-shaped leaves whitish beneath, and with large, resinous, fragrant buds. The buds are used in medicines. Found in the Black Hills and at Sioux Falls. It may possibly occur also in the northeastern part of the state.

12. COMMON COTTONWOOD OR NECKLACE POPLAR (*Populus monilifera*, Ait.) This well-known tree occurs throughout the state. It is one of our largest trees. It reaches its best development along the moist sandy bottoms of the

Missouri. A variety with rougher bark and firmer wood of a yellowish color, is of most value for the timber. It is known as the "Yellow Cottonwood." Along the Cheyenne river the cottonwoods are much more closely branched than is common for this tree. This is probably due to the severe winds which come across the range and break off the tops and branches of the trees. A form occurs along Yellow Bank creek in the northeastern part of the state which may prove to be a hybrid between this species and the preceding. Mr. Rydberg reports a form from the Black Hills which he calls *forma cuneata* on account of the cuneate bases of the long-pointed leaves.

13. QUAKING ASP (*Populus tremuloides*, Michx.) This is a small tree with smooth greenish-white bark. The leaves are usually fringed on the margins with minute hairs and the petioles are long, flat and thin, allowing the leaves to be moved by the slightest breeze. Found in the Black Hills, along banks of streams and lakes throughout the Sioux Valley and the Bigstone regions. A small clump of trees was also found at Iron Springs in the Bad Lands. Though a pretty tree it is not very valuable.

14. ALMOND WILLOW, "WHITE WILLOW" (*Salix amygdaloides*, Anders.) A small tree, one of the prettiest of our native willows. It looks very much like the Black willow but may be distinguished by its broader leaves with pale undersurface. It is also a smaller tree generally than the Black willow. This willow was found at Huron and probably occurs throughout the eastern part of the state.

15. HEART-LEAVED WILLOW (*Salix cordata*, Muhl.) A large shrub or small tree; the leaves, especially those of the young, vigorous shoots, with more or less rounded or heart-shaped base. It is found in various localities in the

eastern part of the state and Mr. Rydberg reports it from the Black Hills.

16. DIAMOND WILLOW, RED WILLOW (*Salix cordata vestita*, Anders.) This willow often reaches a height of thirty feet and always grows in rather dense clumps, the older stems dying after a time and thus making way for the newer growths. The older stems are more or less conspicuously marked by peculiar diamond-shaped places of arrested wood-growth. These places occur at the bases of lateral twigs which were starved or crowded out in the struggle for existence. The wood of this willow is very durable and is often used for posts. It is said to be as lasting as red cedar. It is also regarded as a valuable wood for fuel. The heart wood assumes a reddish color in the older trees, hence the common name of "Red Willow." It is very common along the low banks of streams and lakes throughout the entire state.

17. GLAUCOUS WILLOW (*Salix discolor*, Muhl.) A small willow with the leaves bright green above and usually paler beneath. Apparently uncommon. It occurs in the Black Hills, according to Mr. Rydberg.

18. YELLOW WILLOW (*Salix flavescens*, Nutt.) A shrub found in the Black Hills. It may be recognized by the nearly entire leaves which are downy, or smooth and dull green above, and pale with a rufous pubescence beneath.

19. HAIRY WILLOW (*Salix glauca villosa*, Anders.) This willow usually occurs as a medium-sized shrub, but in Grant county it reaches 12 feet in height. The leaves are oblanceolate, more or less thickly covered with soft, fine hairs, distinctly veined, usually about two inches long, entire or the upper ones somewhat toothed. A very pretty willow growing along low banks. Found at various places in the Black Hills and on the Yellow Bank in Grant county.

20. PRAIRIE WILLOW (*Salix humilis*, Marsh.) A small shrub reported from the Black Hills by Mr. Rydberg. Dr. Bessey\* suggests that it "might be used as a 'cover' in forestry planting, especially in the sandy regions of the state" (Nebraska.) It is quite probable that this willow will be found elsewhere in the state.

21. NARROW-LEAVED OR SANDBAR WILLOW (*Salix longifolia*, Muhl.) A shrub or small tree with very narrow, toothed leaves. It is our commonest willow, found all over the state in moist soil. It is very abundant along the low, sandy banks and bars of our streams and lakes. On the broad bottoms along the Missouri river it is one of the first plants that appear on the newly formed sandbars, coming up so thickly as to completely cover the bar in a very short time.

22. BLACK WILLOW (*Salix nigra*, Marsh.) This is the largest willow found in the state. It grows along the banks of streams, often at the water's edge, with the slender branches bending down to its surface. The leaves are long and tapering, often downy when young but smooth and green when old. The bark is brown, rough, and rather thick. Perhaps the most valuable of our native willows, especially in groves and windbreaks. It is very plentiful in the eastern part of the state and probably occurs throughout.

23. BEAKED WILLOW (*Salix rostrata*, Rich.) "A small bush, five to seven feet high." Leaves downy above, soft-hairy beneath, strongly nerved, dull green. Collected at Custer, by Mr. Rydberg.

#### BIRCH FAMILY.

24. HOP-HORNBEAM OR IRONWOOD (*Ostrya virginiana* (Mill.) Willd.) A small tree with thin bark and tough,

\*Bull. 18, Nebr. Exp. Sta., p. 8.



heavy wood; leaves ovate, taper-pointed, sharply and doubly toothed; fruit clusters hop-like in appearance. The wood is very valuable because of its strength and durability.

Ironwood is very common in the Black Hills and in the northeastern part of the state (Roberts, Grant and Deuel counties.) It has also been collected in Union county by Mr. Wallace.

25. HAZEL-NUT (*Corylus Americana*, Walt.) This well-known nut-bearing shrub occurs in various places along the Sioux valley, in the Big Stone basin and in the Black Hills. It grows in thickets in the more heavily wooded localities.

26. BEAKED HAZEL-NUT (*Corylus rostrata*, Ait.) A shrub much like the preceding but with ovate or ovate-oblong leaves and with the very bristly husks of the fruit prolonged into a narrow tubular beak. This replaces the common hazel-nut in the higher region of the Black Hills.

27. DWARF BIRCH (*Betula glandulosa*, Michx.) A small shrub with the "branchlets conspicuously dotted with resinous, wart-like glands." Found in the Black Hills near Rapid City and at Rochford, apparently common in the higher hills.

28. BLACK BIRCH (*Betula occidentalis*, Hook.) A small tree with rather dark colored bark and the younger branches more or less resinous-dotted. Common in the Black Hills.

29. CANOE BIRCH (*Betula papyrifera*, Marsh.) A large tree, the chalky-white bark of which comes off in thin papery sheets. Common in deep wooded canons in the Black Hills.

## OAK FAMILY.

30. WHITE OAK (*Quercus alba*, L.) This well-known oak is reported from the Black Hills by Mr. Rydberg, but with some doubt, as only young trees were found and these without fruit. His specimens were collected near Hermosa.

31. MOSSY-CUP OR BURR-OAK (*Quercus macrocarpa*, Michx.) This valuable tree is more or less common throughout the entire state. It may be recognized by the mossy fringe to the acorn-cups. The wood is firm, heavy and strong and is very valuable for fuel and fence-posts. In the eastern part of the state it frequently becomes a large tree but in the west it is smaller, seldom exceeding 20 feet in height in the Black Hills.

## ELM FAMILY.

32. WHITE OR AMERICAN ELM (*Ulmus americana*, L.) A large tree found throughout the state. It is very common along our streams and lakes. The twigs and buds are usually smooth, but a form occurs (especially in the western part of the state) with these more or less pubescent. When growing in very moist situations the trees become abundantly supplied with sap while the wood becomes coarser and it is then often called "Water Elm." This is the best deciduous native tree for use as an ornamental in the state. Under proper treatment it becomes one of the most graceful trees grown in the west. It transplants easily and has fewer insects and fungus enemies than any other native tree.

33. RED OR SLIPPERY ELM (*Ulmus pubescens*, Walt.) This well known tree is found more or less plentifully in the southeastern part of the state. The leaves are roughish and the twigs and buds downy or hairy. It is a

smaller tree than the preceding, with tough, reddish wood and a mucilaginous inner bark which is much used as a demulcent or emollient. This is the *Ulmus fulva* of Gray's Manual. Found in Union, Minnehaha and Charles Mix counties.

• 34. ROCK ELM (*Ulmus racemosa*, Thomas.) A large and valuable tree; buds and young branchlets pubescent; branches often with corky ridges; leaves smooth; flowers in racemes. It has been reported from Minnehaha and Union counties and is found in Nebraska near the Dakota line.

35. HACKBERRY (*Celtis occidentalis*, L.) A medium sized tree with firm, yellowish wood and hard, rough bark. It is valuable for fuel and rails and is a pretty tree for use in groves and forest plantations. Common in woods along lakes and streams throughout the entire state.

#### MULBERRY FAMILY.

36. RED MULBERRY (*Morus rubra*, L.) A small to medium sized tree, bearing black-berry like fruit. It has been collected in Union county by Mr. Wallace.

#### GOOSEFOOT FAMILY.

37. GREASEWOOD (*Sarcobatus vermiculatus*, Hook.) An erect, scraggy shrub; branches white; leaves pale, linear. Common on dry, sterile soil along the Cheyenne river and in the Bad Lands.

#### BARBERRY FAMILY.

38. CREEPING BARBERRY (*Berberis repens*, Lindl.) A low, creeping shrub with yellow wood and inner bark, and rigid, ever-green, compound leaves; leaflets spiny-toothed. The rhizomes are used in medicine as a tonic and alterative. Very common along the sides of wooded canons in the Black Hills.

## MOONSEED FAMILY.

39. MOONSEED (*Menispermum canadense*, L.) A very pretty half-woody climber with greenish bark, large, angled leaves and clusters of black grape-like fruits which are covered with a delicate bloom. It does well under cultivation and is also valuable for its long, slender, yellowish rhizomes which are used in medicine under the name of "Yellow Parilla." It is given chiefly as a tonic and alterative. Missouri river and east.

## SAXIFRAGE FAMILY.

40. GOLDEN OR MISSOURI CURRANT (*Ribes aureum*, Pursh.) A beautiful shrub with golden-yellow, spicy-fragrant flowers and smooth leaves. The fruit is usually black; but yellow colored forms are not uncommon. This is a valuable ornamental shrub, and some of the forms producing larger berries have been recommended for cultivation for the fruit. Found more or less plentifully along the Missouri and its tributaries.

41. SQUAW CURRANT (*Ribes cereum*, Dougl.) A small, scraggy shrub without prickles; leaves, flowers and young fruits usually dotted with resinous glands; berry red, not very palatable. Found pretty generally distributed west of the Missouri river.

42. WILD BLACK CURRANT (*Ribes floridum*, L'Her.) A smooth shrub with glandular-dotted leaves and large yellowish-white flowers in drooping racemes; berry smooth, usually black (but paler forms occur) rather insipid tasting. Plentiful throughout the state; our commonest wild currant. It is easily transplanted and makes a good appearance among other shrubbery.

43. SMOOTH OR MISSOURI GOOSEBERRY (*Ribes gracile*, Michx.) This is the common wild gooseberry of the east-

ern half of the state. The flowers are white or whitish and the filaments of the stamens are nearly or quite a half an inch long. Common east of the Missouri, and probably found throughout the state.

44. SWAMP OR LOWLAND GOOSEBERRY (*Ribes lacustre*, Poir.) Stem armed with prickles and weak thorns; berry small, bristly, with an unpleasant taste. In damp shady places. Rare. Black Hills (Lead City and Sylvan Lake.)

45. SMOOTH. GOOSEBERRY (*Ribes oxycanthoides* L.) Much like the Missouri gooseberry but with whitish spines, greenish or purplish, short-stalked flowers and short filaments. Fruit small, smooth, purple, pleasant. Brookings county, and probably throughout the state.

46. SPINY GOOSEBERRY (*Ribes setosum*, Lindl.) Similar to the preceding, but Mr. Rydberg speaks of it as follows: "It has been named *R. oxycanthoides* \* \* \*" from which it differs in that the leaves are finely pubescent, the calyx-tube cylindrical and longer than the lobes, the fruit being sometimes a little bristly and dark purple, extremely sour even when ripe. Common in the Black Hills (Custer, Minnekahta, Rapid City.)

#### ROSE FAMILY.

47. WESTERN NINEBARK (*Opulaster monogynus*, Tor.) A small shrub with finely pubescent leaves, having fruit and bark coming off in shreds. This would be valuable for cultivation. It is the *Physocarpus Torreyi* of Coulter's Manual. Plentiful along the steep sides of canons in the Black Hills.

48. NINEBARK (*Opulaster opulifolius* (L.) Kunze.) Somewhat like the last, but larger throughout, with smoother leaves and fruit and longer flower stalks. Often found in cultivation. This is *Physocarpus opulifolius* of Gray's Manual. Black Hills.



49. BIRCH-LEAVED MEADOW-SWEET (*Spiraea betulifolia corymbosa* (Raf.) Wats.) A small shrub with reddish bark and whitish or pale-purple flowers in close corymbs. Not uncommon in the Black Hills.

50. WILLOW-LEAVED MEADOW-SWEET (*Spiraea salicifolia*, L.) A low shrub with narrow, toothed leaves and crowded panicles of white or flesh-colored flowers. Very pretty and easily cultivated. Not uncommon in the Sioux Valley and Big Stone regions.

51. MOUNTAIN ASH (*Sorbus sambucifolia*, (C. & S.) Roem.) A large shrub with compound leaves and red, berry-like fruit. Reported by Mr. Rydberg from the Black Hills upon the authority of Mr. Runkel, a lumberman.\*

52. SUSCUTAN, SUGAR-BERRY OR JUNE-BERRY (*Amelanchier alnifolia*, Nutt.) A medium-sized shrub with broadly ovate or rounded leaves which are coarsely toothed toward the apex; white flowers, and purple, berry-like, edible fruit. Much cultivated both for the fruit and as an ornamental. Common throughout the state.

53. SHAD-BUSH OR SERVICE-BERRY (*Amelanchier canadensis*, (L.) Medic.) Larger than the preceding with ovate or ovate-oblong pointed leaves; flowers large in drooping racemes; fruit globose, crimson or purplish; edible. This has been reported from Sioux Falls, and what is probably this species was collected in Grant county.

54. HAWTHORN (*Crataegus coccinea*, L.) A large shrub or small tree with reddish branches and stout chestnut-brown thorns; berries red, about one-half an inch in diameter. Apparently common throughout the state. The variety *macracantha* with larger spines, flowers and fruits and thicker leaves also occurs, seemingly widely distributed.

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\*Since writing the above, specimens of Mountain Ash have been received from the Black Hills near Runkels through the kindness of Mr. Geo. Runkel.

55. **HAIRY HAWTHORN** (*Crataegus mollis* (T. & G.) Scheele.) Much like the preceding but with larger leaves, often roughish above, more or less hairy beneath, usually cordate at the base; fruit larger; shoots densely pubescent. More or less common in the eastern part of the state.

56. **BLACK RASPBERRY** (*Rubus occidentalis*, L.) Stems armed with stout prickles and covered with a whitish bloom; leaves, white-downy beneath; fruit, black. Very abundant in thickets and open woods throughout the eastern half of the state and probably occurring to the westward also.

57. **SALMON-BERRY** (*Rubus parviflorus*, Nutt.) Distinguished from our other species by the larger flowers and the simple, five-lobed leaves. Found in the Black Hills.

58. **RED RASPBERRY** (*Rubus strigosus*, Michx.) Stem with few prickles but often densely covered with stiff, straight bristles; fruit red. More or less common throughout the entire state, growing in thickets and on rather dry, wooded hills.\*

59. **SHRUBBY CINQUE-FOIL** (*Potentilla fruticosa*, L.) A small, erect, much branched shrub with silky, compound leaves and yellow flowers. A handsome shrub in cultivation. Abundant along the sides of canons in the Black Hills.

60. **MOUNTAIN MAHOGANY** (*Cercocarpus parvifolius*, Nutt.) A small to medium sized shrub with small, wedge-shaped, silky-hairy leaves and fruits with feathery tails four inches in length. Found in the Black Hills and seemingly very rare.

61. **SAY'S ROSE** (*Rosa acicularis*, Lindl.) A low rose

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\*Dwarf Raspberry (*Rubus triflorus*, Rich.) An annual, herbaceous species, is common in the Black Hills.

with a very prickly stem, globose fruit and large, usually solitary flowers. It has been found at Bigstone, and probably occurs more or less plentifully on high grounds throughout the northern part of the state.

62. PRAIRIE ROSE (*Rosa arkansana*, Porter.) This is the common rose of our dry prairies. It is usually very prickly. It is one of the worst weeds in groves and forest plats and is often troublesome in grain-fields, particularly where fall plowing is not practiced. Found throughout the state, though perhaps more abundant in the eastern half.

63. ENGELMANN'S ROSE (*Rosa Engelmanni*, Watson.) Stems often three or four feet high and more or less prickly; fruit ovate-oblong, half an inch or more long. Not uncommon in the western part of the state, particularly in the Black Hills.

64. FENDLER'S ROSE (*Rosa fendleri*, Crepin.) Stems usually tall, moderately prickly. Doubtfully distinct from *R. woodsii*. Common along edges of thickets and low places in the western part of the state.

65. SMOOTH OR SWAMP ROSE (*Rosa blanda*, Ait.) Stems rather tall, smooth or with few prickles. This is the common rose of the low grounds and rocky margins of lakes in the eastern part of the state.

66. LOW ROSE (*Rosa woodsii*, Lindl.) Stem usually low and smooth or with slender prickles. Common in the western part of the state where it replaces the preceding.

67. WILD PLUM (*Prunus americana*, Marsh.) The only plum yet found in the state. The fruit varies greatly in size, color and flavor. Many forms occur that are valuable for orchard planting. It is abundant throughout the entire state.

68. WILD CHERRY (*Prunus demissa*, Walpers.) An erect shrub, much like the common choke cherry, but more tree-like in habit and with larger, purplish-black sweetish fruit. Common in the western part of the state where the fruit is prized very highly for table use.

69. WILD RED CHERRY (*Prunus pennsylvanica*, L. f.) A small tree with narrow, finely toothed leaves and small reddish, sour fruits. Woods in various parts of the Black Hills.

70. SAND CHERRY (*Prunus prumila*, L.) A low shrub with narrow toothed leaves which are pale beneath. The fruit varies a great deal in size, color and taste. It is usually dark red or purplish-black and pleasant to the taste. At Pineau Hills a form occurs with very large purple-black fruits in which the astringent taste is almost entirely wanting. A yellowish fruited form is growing on the college grounds. Mr. Rydberg reports a sand cherry with fruits nearly an inch in diameter from the foot-hills of the Black Hills region. It is possible that more than one species occurs within the state.

71. CHOKE CHERRY (*Prunus virginiana*, L.) A large shrub known by its astringent fruit, and thin, smooth, sharply-toothed leaves. More or less common throughout the state, but largely replaced by the wild cherry west of the Missouri.

#### BEAN FAMILY.

72. HONEY LOCUST (*Gleditsia triacanthos*, L.) A large and valuable tree with large branched thorns; long, thin twisted pods and hard, heavy wood. Found in Union county.

73. KENTUCKY COFFEE-TREE (*Gymnocladus dioica*, (L.) Koch.) A (with us) medium-sized tree with rough, scaly bark; large, compound leaves and large pods. A valuable tree, growing in rich woods in Clay and Union counties.

74. SHOE-STRING OR LEAD PLANT (*Amorpha canescens*, Nutt.) A low, white-hairy shrub with purple flowers in spikes and long, tough roots. Dry soils throughout.

75. FALSE INDIGO (*Amorpha fruticosa*, L.) A medium-sized, smooth shrub growing along banks of streams. A beautiful plant well worthy of cultivation. Found all over the state, but perhaps more plentifully east of the Missouri.

76. DWARF FALSE INDIGO (*Amorpha microphylla*, Pursh.) A low, smoothish shrub, common west of the Missouri.

#### RUE FAMILY.

77. PRICKLY ASH (*Xanthoxylum americanum*, Mill.) A prickly shrub with the leaves, fruit and bark pungent and aromatic. Valuable as a medicinal plant as well as for ornamental purposes. More or less common along woody banks east of the Missouri.

#### CASHEW FAMILY.

78. SMOOTH SUMACH (*Rhus glabra*, L.) A low or medium sized shrub growing on rather dry and rocky banks in the eastern part of the state. The leaves are sometimes used in tanning leather, and both leaves and fruit are of medicinal value.

79. POISON OAK, POISON IVY (*Rhus toxicodendron*, L.) In moist prairies and thickets it grows as a low, upright shrub, while in woods and rocky places it is a climber. It may be readily known by its trifoliate leaves and shiny, white, clustered, berry-like fruits. On many people this plant causes a disagreeable eruption of the skin. Common throughout the state.

80. LOW SUMACH (*Rhus trilobata*, Nutt.) A low, straggling shrub with strong-smelling foliage. Dry banks. Common along the Missouri and to the westward.

## STAFF-TREE FAMILY.

81. WAAHOO OR BURNING BUSH (*Eumyrtus atropurpureus*, Jacq.) A low shrub with dark purple flowers, crimson fruit and four-angled branches. One of our prettiest shrubs and easily grown. Missouri river and eastward.

82. BITTERSWEET (*Celastrus scandens*, L.) A twining shrub with orange-yellow pods which burst in autumn and expose the crimson, fleshy seeds. Abundant throughout the state and thriving under cultivation.

## MAPLE FAMILY.

83. MOUNTAIN MAPLE (*Acer glabrum*, Torr.) A shrub or small tree growing along streams in the Black Hills.

84. BOX ELDER OR ASH-LEAVED MAPLE (*Acer negundo*, L.) This well known tree is plentiful all over the state and is widely cultivated. It is the *Negundo aceroides* of the manuals.

85. SOFT OR SILVER MAPLE (*Acer saccharinum*, L.) A fine ornamental tree; very rare in South Dakota, occurring only in the southeastern part of the state (Union and Minnehaha counties.)

## BUCKTHORN FAMILY.

86. FENDLER'S CEANOTHUS (*Ceanothus fendleri*, Gray.) A low, much-branched, spiny shrub with dense clusters of smooth flowers. Black Hills, "Bull Springs in the Limestone district west of Custer" (Rydberg.)

87. RED ROOT (*Ceanothus ovatus*, Desf.) A low shrub with rather narrow glandular-toothed leaves and clusters of fragrant white flowers. Dry Hills in the southeastern part of the state and in the Black Hills.

88. VELVETY CEANOTHUS (*Ceanothus velutinus*, Dougl.) A low shrub with shining, velvety leaves, found in the Black Hills.

## VINE FAMILY.

89. EARLY WILD GRAPE (*Vitis vulpina*, L.) This is the common native grape and is found all over the state. The fruit is widely used for making pies, jellies, etc.

90. VIRGINIA CREEPER OR FIVE-LEAVED IVY (*Parthenocissus quinque-folia*, (L.) Planch.) A hardy climber with compound five-foliate leaves which turn crimson in autumn, and small, blackish berries. Found in wooded places throughout the state. A valuable ornamental.

## LINDEN FAMILY.

91. BASSWOOD (*Tilia americana*, L.) A large tree with broad leaves, grey bark and soft, white wood. The flowers produce an abundance of first class honey. Found in the Sioux Valley, Big Stone and lower Missouri Valley regions.

## OLEASTER FAMILY.

92. SILVER BERRY (*Elæagnus argentea*, Pursh.) A beautiful shrub with silvery leaves and fruits. Found in the Black Hills and along the upper Missouri valley.

93. BUFFALO BERRY (*Shepherdia argentea*, Nutt.) A large thorny shrub or small tree with silvery leaves and younger branches, and clusters of red or amber-yellow berries. Valuable as a hedge or ornamental plant, while the fruit is much used in making jellies, etc. Common over the western half of the state.

94. LOW SHEPHERDIA (*Shepherdia canadensis*, Nutt.) A small shrub with the leaves green above and silvery-downy and scurfy beneath; fruit yellowish red, insipid. More or less common in the Black Hills.

## DOGWOOD FAMILY.

95. ROUGH-LEAVED DOGWOOD (*Cornus asperifolia*, Michx.)

A tall shrub with brownish branches, rough hairy leaves and white fruits. Union county.

96. BAILEY'S CORNELL (*Cornus baileyi*, Coulter and Evans.) A shrub with brownish-purple branches and the under surface of the leaves woolly-haired. Northern and western parts of the state.

97. KINNIKINNIK OR SILKY CORNELL (*Cornus sericea*, L.) A shrub with purple stems and silky-downy leaves and branches; fruit pale blue. Found in Bon Homme and Charles Mix counties.

98. RED-OSIER DOGWOOD (*Cornus stolonifera*, Michx.) A small or medium sized shrub with smooth, red-purple branches, leaves whitish beneath and fruit white or lead-colored; widely spreading by prostrate or underground suckers. Throughout the state.

#### HEATH FAMILY.

99. BEARBERRY (*Arctostaphylos ura-ursi*, Spreng.) A pretty trailing shrub with oblong-spatulate, evergreen leaves and bright red berries. The leaves are of medicinal value. Abundant in the Black Hills.

100. SMALL-LEAVED WHORTLEBERRY (*Vaccinium myrtillus microphyllum*, Hook.) A low shrub with angled, green branches, small, shining leaves and red or finally blackish berries. Shady hillsides near Lead City.

#### ASH OR OLIVE FAMILY.

101. WHITE ASH (*Fraxinus americana*, L.) A large and valuable tree reported from the southeast corner of the state. There is some doubt as to its being a native and further information is desired.

102. GREEN ASH (*Fraxinus lanceolata*, Borck.) A medium sized tree, branches usually smooth; leaves green on both sides; fruits about one and one-half inches long, the



edges gradually dilated into the linear or spatulate wing. One of the most valuable of our native trees; found throughout the state, though perhaps more plentiful in the eastern part. This is *Fraxinus viridis* of the manuals.

103. RED ASH (*Fraxinus pennsylvanica*, Marsh.) Much like the preceding but with downy twigs and less toothed leaflets which are pale beneath. Found throughout the state but most plentiful in the western part.

### HONEYSUCKLE FAMILY.

104. ELDER (*Sambucus canadensis*, L.) A shrub with large pith, broad, flat clusters of fragrant, white flowers and small, purplish-black berries. The buds, leaves, inner bark, flowers and fruits are used in medicine. It occurs in the Black Hills and in the southeast corner of the state.

105. RED-BERRIED ELDER (*Sambucus pubens* Michx.) This may be distinguished from common elder by the paniculately clustered flowers and red berries. Not uncommon in the Black Hills.

106. SHEEP-BERRY (*Viburnum lentago*, L.) A medium-sized shrub with pointed, sharply-toothed leaves, white flowers and large, oval, black berries with a bluish bloom. Common in the Sioux valley, Big Stone and lower Missouri valley regions and in the Black Hills.

107. CRANBERRY TREE (*Viburnum opulus*, L.) This may be distinguished from the preceding by its three-lobed leaves and globose, red fruit. Black Hills. Rare. The Snowball is a cultivated form of this species.

108. WOLF-BERRY OR BUCK BUSH (*Symphoricarpos occidentalis*, Hook.) A low shrub, found on low prairies and in thickets, with clusters of white berries in the axils of the upper leaves. Common throughout the state.

109. SNOW-BERRY (*Symphoricarpos pauciflorus*, (Robbins) Britton.) A low shrub with small leaves and large, white berries. Black Hills. Valuable as an ornamental.

110. INDIAN CURRANT (*Symphoricarpos vulgaris*, Michx.) A low shrub, found on rocky banks; berries small, red, in axillary clusters. East of the Missouri and most plentiful in the southeastern counties.

111. HAIRY HONEYSUCKLE (*Lonicera hirsuta*, Eaton.) A twining shrub with the leaves downy-hairy beneath and with whorls of yellow or purplish flowers in the axils of the upper leaves. Moist, rocky banks in the lower Sioux valley and in the Big Stone basin.

#### SUNFLOWER FAMILY.

112. GREEN GREASEWOOD (*Gutierrezia sarothrae*, (Pursh) Britton and Rusby.) A low, shrubby plant with narrow green leaves and yellow flowers. Common in the western half of the state.

113. RAYLESS GOLDEN-ROD (*Bigelovia graveolens*, Gray.) A low, shrubby, branched plant with narrow, cottony-hairy (at least while young) leaves and yellow golden-rod-like flowers in which the rays are wanting. Bluffs along the Missouri and to the westward. Several forms occur.

114. RAYLESS GOLDEN-ROD (*Bigelovia douglasii*, Gray.) Somewhat like the preceding but larger, with hairs wanting and with the stem green and often resinous-viscid. Common along the Cheyenne river.

115. LITTLE SAGE BRUSH (*Artemisia cana*, Pursh.) A low, much-branched silvery shrub with narrow, usually entire leaves. Plains in the western part of the state.

116. WORM-WOOD (*Artemisia filifolia*, Torr.) A low branched, half-woody, whitish plant with very slender leaves. Not uncommon in the western half of the state.

117. **SAGE BRUSH** (*Artemisia tridentata*, Nutt.) A much-branched shrub with wedge-shaped, usually three-toothed leaves. The largest of the sage brushes, said to occur in the extreme western part of the state.







